

TERMS OF REFERENCE
CONSULTANCY SERVICES FOR
PREPARATION OF DETAILED DESIGN / DRAWINGS AND
SPECIFICATIONS OF PRECAST MANHOLES FOR WASA LAHORE

PROJECT BACKGROUND:

Lahore being the capital city of Punjab and center of socio-economic activities is rapidly urbanizing. People from other parts of country are migrating towards Lahore at rapid rates. Water and Sanitation Agency (WASA) Lahore, is the subsidiary agency of Lahore Development Authority (LDA), Government of the Punjab, Pakistan, to perform all functions and exercise all powers with regard to water supply, sewerage and drainage with power to collect rates, fees and charges for water supply, sewerage & drainage. WASA Lahore is a regulated monopoly for water supply & sewerage services in the 2nd largest city of Pakistan, operating in the area of more than 350 Sq.Km.

As far as the sewerage system is concerned, WASA Lahore is currently using brick masonry manholes which are constructed in a conventional manner. There are several drawbacks / limitation of brick masonry manholes including but not limited to leakages due to poor workmanship, more construction time and limited compressive strength. Leakages from brick masonry manhole not only results in unsanitary conditions, but also pollutes underground water reserve which is a major cause of concern.

An emerging & sustainable alternate to conventional brick masonry manholes is Precast RCC manhole which provides better standardization, strength and overall quality. It is important to mention here that Housing Urban Development and Public Health Engineering Department (HUD&PHED) also intends to revise the Design Criteria for Water Supply, Sewerage & Drainage system in Punjab. In this regard, various meetings have been held under the Chairmanship of Additional Secretary (Tech.) HUD&PHED on 16.10.2023 and 15.01.2023 to finalize the said design criteria. During discussions regarding sewerage systems, the usage / laying of precast RCC manholes as a replacement of conventional brick masonry manholes was highlighted. It was pointed out that they can bear heavy compressive loads when compared with conventional manholes.

PROJECT OBJECTIVES:

Under the project, WASA aims to carry out the design of Precast RCC manholes conforming to ASTM C478-97 (or any latest revision).

SCOPE OF SERVICES:

The scope of services include, but not limited to, the following:

1. Preparation of preliminary & detailed drawings and specifications of Precast RCC manholes (for 33" to 72" i/d RCC sewer pipes) for a suitable depth, conforming to ASTM C478-97 (or any latest revision).
2. Preparation of Bill of Quantities & Engineering Cost Estimates of Precast RCC manholes as mentioned above.
3. Preparation and provision of guidelines regarding transportation / handling and installation of Precast RCC manholes.

KEY EXPERTS:

Sr. No.	Position	No. of Persons	Time (Months)	Qualification & Experience
1.	Design Engineer	01	1.5	Education: Bachelor's Degree in Civil Engineering / Public Health Engineering / Environmental Engineering. Experience: Minimum of 5 years working experience in design & cost estimation of Engineering works.
2.	Senior Detailer	02	1.5	Education: Bachelor's Degree in Arts/ Bachelor's Degree in Technology. Experience: Minimum of 15 years working experience. 10 years' experience on engineering design / drawing softwares such as AutoCad / Teckla / Revit.

REPORTING REQUIREMENTS:

Sr. No.	Deliverable	No. of Copies
1	Concept design / Preliminary drawings	05
2	Detailed / Shop Drawings and Specifications	10
3	Bill of Quantities & Engineering Cost Estimates	05
4	Installation guidelines	05

DURATION OF THE ASSIGNMENT:

The Consultant will be required to complete the whole activities in a period of 45 days (1.5 Months).